CLAIMS

1.   A recording apparatus for recording information on a write-once recording medium, the write-once recording medium including a disk management information area and a volume space, the recording apparatus comprising:

a host apparatus; and

a drive apparatus,

the host apparatus including:

a first instruction section for instructing the drive apparatus to allocate at least one first track and at least one second track to the volume space;

a second instruction section for instructing the drive apparatus to record a file on the at least one first track;

a third instruction section for instructing the drive apparatus to record a file structure on the at least one second track, the file structure managing the file;

a fourth instruction section for instructing the drive apparatus to record a virtual allocation table structure in the volume space, the virtual allocation table structure managing a recording location of the file structure; and

a fifth instruction section for instructing the drive apparatus to record track management information in the disk management information area, the track management information managing the at least one first track and the at least one second track,

the drive apparatus including:

a head section for allocating the at least one first track and the at least one second track to the volume space, recording the file on the at least one first track, recording the file structure on the at least one second track, recording the

virtual allocation table structure in the volume space and recording the track

management information in the disk management information area; and

a control section for controlling the head section so as to allocate the

at least one first track and the at least one second track to the volume space, record

the file on the at least one first track, record the file structure on the at least one

second track, record the virtual allocation table structure in the volume space and

record the track management information in the disk management information area.

2.   A recording apparatus according to claim 1, wherein the control

section controls the head section so as to record the virtual allocation table structure

in an area subsequent to a last recorded location of the file of the at least one first

track.

3.   A recording apparatus according to claim 1, wherein the third

instruction section further instructs the drive apparatus to record predetermined

information on the at least one second track, and

the control section controls the head section so as to record the

predetermined information of the file structure on the at least one second track.

4.   A host apparatus included in a recording apparatus for recording

information on a write-once recording medium, the write-once recording medium

including a disk management information area and a volume space, the recording

apparatus further including:

a drive apparatus for recording the information on the write-once

recording medium,

the host apparatus including:

a first instruction section for instructing the drive apparatus to allocate at least one first track and at least one second track to the volume space;

a second instruction section for instructing the drive apparatus to record a file on the at least one first track;

a third instruction section for instructing the drive apparatus to record a file structure on the at least one second track, the file structure managing the file;

a fourth instruction section for instructing the drive apparatus to record a virtual allocation table structure in the volume space, the virtual allocation table structure managing a recording location of the file structure; and

a fifth instruction section for instructing the drive apparatus to record track management information in the disk management information area, the track management information managing the at least one first track and the at least one second track.

5.   A recording apparatus according to claim 4, wherein the third instruction section further instructs the drive apparatus to record predetermined information of the file structure on the at least one second track.

6.   A recording method for recording information on a write-once recording medium, the write-once recording medium including a disk management information area and a volume space, the recording method comprising:

a first instruction step of instructing to allocate at least one first track and at least one second track to the volume space;

an allocation step of allocating the at least one first track and the at least one second track to the volume space;

a second instruction step of instructing to record a file on the at least one first track;

a first recording step of recording the file on the at least one first track;

a third instruction step of instructing to record a file structure on the at least one second track, the file structure managing the file;

a second recording step of recording the file structure on the at least one second track;

a fourth instruction section of instructing to record a virtual allocation table structure in the volume space, the virtual allocation table structure managing a recording location of the file structure;

a third recording step of recording the virtual allocation table structure in the volume space;

a fifth instruction section of instructing to record track management information in the disk management information area, the track management information managing the at least one first track and the at least one second track; and

a fourth recording step of recording the track management information in the disk management information area.

7.   An instruction method executed by a host apparatus included in a recording apparatus for recording information on a write-once recording medium, the write-once recording medium including a disk management information area and a volume space, the instruction method comprising:

a first instruction step of instructing to allocate at least one first track and at least one second track to the volume space;

a second instruction step of instructing to record a file on the at least one first track;

a third instruction step of instructing to record a file structure on the at least one second track, the file structure managing the file;

a fourth instruction step of instructing to record a virtual allocation table structure in the volume space, the virtual allocation table structure managing a recording location of the file structure; and

a fifth instruction step of instructing to record track management information in the disk management information area, the track management information managing the at least one first track and the at least one second track.

8. A program for executing a recording procedure by a recording apparatus for recording information on a write-once recording medium, the write-once recording medium including a disk management information area and a volume space, the recording procedure including:

a first instruction step of instructing to allocate at least one first track and at least one second track to the volume space;

an allocation step of allocating the at least one first track and the at least one second track to the volume space;

a second instruction step of instructing to record a file on the at least one first track;

a first recording step of recording the file on the at least one first track;

a third instruction step of instructing to record a file structure on the at least one second track, the file structure managing the file;

a second recording step of recording the file structure on the at least one second track;

a fourth instruction step of instructing to record a virtual allocation table structure in the volume space, the virtual allocation table structure managing a recording location of the file structure;

a third recording step of recording the virtual allocation table structure in the volume space;

a fifth instruction step of instructing to record track management information in the disk management information area, the track management information managing the at least one first track and the at least one second track; and

a fourth recording step of recording the track management information in the disk management information area.

9.   A program for executing an instruction procedure by a host apparatus included in a recording apparatus for recording information on a write-once recording medium, the write-once recording medium including a disk management information area and a volume space, the instruction procedure including:

a first instruction step of instructing to allocate at least one first track and at least one second track to the volume space;

a second instruction step of instructing to record a file on the at least one first track;

a third instruction step of instructing to record a file structure on the at least one second track, the file structure managing the file;

a fourth instruction step of instructing to record a virtual allocation table structure in the volume space, the virtual allocation table structure managing a recording location of the file structure; and

a fifth instruction step of instructing to record track management information in the disk management information area, the track management information managing the at least one first track and the at least one second track.

10.   An integrated circuit included in a recording apparatus for recording information on a write-once recording medium, the write-once recording medium including a disk management information area and a volume space, the recording apparatus further including:

a drive apparatus for recording the information on the write-once recording medium,

the integrated circuit including:

a first instruction section for instructing the drive apparatus to allocate at least one first track and at least one second track to the volume space;

a second instruction section for instructing the drive apparatus to record a file on the at least one first track;

a third instruction section for instructing the drive apparatus to record a file structure on the at least one second track, the file structure managing the file;

a fourth instruction section for instructing the drive apparatus to record a virtual allocation table structure in the volume space, the virtual allocation table structure managing a recording location of the file structure; and

a fifth instruction section for instructing the drive apparatus to record track management information in the disk management information area, the track management information managing the at least one first track and the at least one second track.

11.   A reproduction apparatus for reproducing information from a write-once recording medium, the write-once recording medium including a disk management information area and a volume space, at least one first track and at least one second track being allocated to the volume space, a file being recorded on the at least one first track, a file structure which manages the file being recorded on the at least one second track, a virtual allocation table structure which manages a recording location of the file structure being recorded in the volume space, and track management information which manages the at least one first track and the at least one second track being recorded in the disk management information area, the reproduction apparatus comprising:

a host apparatus; and

a drive apparatus,

the host apparatus including

a first instruction section for instructing the drive apparatus to reproduce the track management information from the disk management information area;

a second instruction section for instructing the drive apparatus to reproduce the virtual allocation table structure from the volume space based on the track management information;

a third instruction section for instructing the drive apparatus to reproduce the file structure from the at least one second track; and

a fourth instruction section for instructing the drive apparatus to reproduce the file from the at least one first track,

the drive apparatus including

a head section for reproducing the track management information from the disk management information area, reproducing the virtual allocation table structure from the volume space, reproducing the file structure from the at least one second track and reproducing the file from the at least one first track; and

a control section for controlling the head section so as to reproduce the track management information from the disk management information area, reproduce the virtual allocation table structure from the volume space, reproduce the file structure from the at least one second track and reproduce the file from the at least one first track.

12.   A reproduction apparatus according to claim 11, wherein the virtual allocation table structure is recorded in an area subsequent to a last recorded location of the file of the at least one first track; and

the second instruction section instructs the drive apparatus to reproduce the virtual allocation table structure from the area subsequent to the last recorded location of the file.

13.   A reproduction apparatus according to claim 11, wherein predetermined information of the file structure is further recorded on the at least one second track, and

the third instruction section instructs the drive apparatus to reproduce the predetermined information from the at least one second track.

14.   A host apparatus included in a reproduction apparatus for reproducing information from a write-once recording medium, the write-once recording medium including a disk management information area and a volume space, at least one first track and at least one second track being allocated to the volume space, a file being recorded on the at least one first track, a file structure which manages the file being recorded on the at least one second track, a virtual allocation table structure which manages a recording location of the file structure being recorded in the volume space, and track management information which manages the at least one first track and the at least one second track being recorded in the disk management information area, the reproduction apparatus further including:

a drive apparatus for reproducing the information from the write-once recording apparatus,

the host apparatus including,

a first instruction section for instructing the drive apparatus to reproduce the track management information from the disk management information area;

a second instruction section for instructing the drive apparatus to reproduce the virtual allocation table structure from the volume space based on the track management information;

a third instruction section for instructing the drive apparatus to reproduce the file structure from the at least one second track; and

a fourth section for instructing the drive apparatus to reproduce the file from the at least one first track.

15.   A reproduction apparatus according to claim 14, wherein predetermined information of the file structure is further recorded on the at least one second track, and

the third instruction section instructs the drive apparatus to reproduce the predetermined information from the at least one second track.

16.   A reproduction method for reproducing information from a write-once recording medium, the write-once recording medium including a disk management information area and a volume space, at least one first track and at least one second track being allocated to the volume space, a file being recorded on the at least one first track, a file structure which manages the file being recorded on the at least one second track, a virtual allocation table structure which manages a recording location of the file structure being recorded in the volume space, and track management information which manages the at least one first track and the at least one second track being recorded in the disk management information area, the reproduction method comprising:

a first instruction step of instructing to reproduce the track management information from the disk management information area;

a first reproduction step of reproducing the track management information from the disk management information area;

a second instruction step of instructing to reproduce the virtual allocation table structure from the volume space based on the track management information;

a second reproduction step of reproducing the virtual allocation table structure from the volume space;

a third instruction step of instructing to reproduce the file structure from the at least one second track;

a third reproduction step of reproducing the file structure from the at least one second track;

a fourth instruction step of instructing to reproduce the file from the at least one first track; and

a fourth reproduction step of reproducing the file from the at least one first track.

17. An instruction method executed by a host apparatus included in a reproduction apparatus for reproducing information from a write-once recording medium, the write-once recording medium including a disk management information area and a volume space, at least one first track and at least one second track being allocated to the volume space, a file being recorded on the at least one first track, a file structure which manages the file being recorded on the at least one second track, a virtual allocation table structure which manages a recording location of the file structure being recorded in the volume space, and track management information which manages the at least one first track and the at least one second track being recorded in the disk management information area, the instruction method comprising:

a first instruction step of instructing to reproduce the track management information from the disk management information area;

a second instruction step of instructing to reproduce the virtual allocation table structure from the volume space based on the track management information;

a third instruction step of instructing to reproduce the file structure from the at least one second track; and

a fourth step of instructing to reproduce the file from the at least one first track.

18.   A program for executing a reproduction procedure by a reproduction apparatus for reproducing information from a write-once recording medium, the write-once recording medium including a disk management information area and a volume space, at least one first track and at least one second track being allocated to the volume space, a file being recorded on the at least one first track, a file structure which manages the file being recorded on the at least one second track, a virtual allocation table structure which manages a recording location of the file structure being recorded in the volume space, and track management information which manages the at least one first track and the at least one second track being recorded in the disk management information area, the reproduction procedure including:

a first instruction step of instructing to reproduce the track management information from the disk management information area;

a first reproduction step of reproducing the track management information from the disk management information area;

a second instruction step of instructing to reproduce the virtual allocation table structure from the volume space based on the track management information;

a second reproduction step of reproducing the virtual allocation table structure from the volume space;

a third instruction step of instructing to reproduce the file structure from the at least one second track;

a third reproduction step of reproducing the file structure from the at least one second track;

a fourth instruction step of instructing to reproduce the file from the at least one first track;

a fourth reproduction step of reproducing the file from the at least one first track.

19.   A program for executing an instruction procedure by a host apparatus included in a reproduction apparatus for reproducing information from a write-once recording medium, the write-once recording medium including a disk management information area and a volume space, at least one first track and at least one second track being allocated to the volume space, a file being recorded on the at least one first track, a file structure which manages the file being recorded on the at least one second track, a virtual allocation table structure which manages a recording location of the file structure being recorded in the volume space, and track management information which manages the at least one first track and the at least one second track being recorded in the disk management information area, the instruction procedure including:

a first instruction step of instructing to reproduce the track

management information from the disk management information area;

a second instruction step of instructing to reproduce the virtual

allocation table structure from the volume space based on the track management

information;

a third instruction step of instructing to reproduce the file structure

from the at least one second track; and

a fourth step of instructing to reproduce the file from the at least one

first track.

20.   An integrated circuit included in a reproduction apparatus for

reproducing information from a write-once recording medium, the write-once

recording medium including a disk management information area and a volume

space, at least one first track and at least one second track being allocated to the

volume space, a file being recorded on the at least one first track, a file structure

which manages the file being recorded on the at least one second track, a virtual

allocation table structure which manages a recording location of the file structure

being recorded in the volume space, and track management information which

manages the at least one first track and the at least one second track being

recorded in the disk management information area, the reproduction apparatus

further including:

a drive apparatus for reproducing the information from the write-once

recording medium,

the integrated circuit including

a first instruction section for instructing the drive apparatus to reproduce the track management information from the disk management information area;

a second instruction section for instructing the drive apparatus to reproduce the virtual allocation table structure from the volume space based on the track management information;

a third instruction section for instructing the drive apparatus to reproduce the file structure from the at least one second track; and

a fourth section for instructing the drive apparatus to reproduce the file from the at least one first track.

21.   A write-once recording medium structured so as to record information thereon, the write-once recording medium comprising:

a disk management information area; and

a volume space,

the volume space is structured such that the at least one first track and the at least one second track are allocated to the volume space;

the at least one first track is structured so such that a file is recorded on the at least one first track;

the at least one second track is structured so such that a file structure which manages the file is recorded on the at least one second track;

the volume space is structured such that a virtual allocation table structure which manages a recording location of the file structure is recorded on the volume space; and

the disk management information area is structured such that track management information which manages the at least one first track and the at least one second track is recorded in the disk management information area.